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ABSTRACT

Summarized are findings and reported in tables are data from the 1975-76 evaluation of Pennsylvania's special education services for 2,308 trainable and educable mentally retarded, physically handicapped, brain injured, and socially and emotionally disturbed elementary and secondary students. It is explained that measures of student progress (statistics are appended for each handicapping classification), program ratings, and cost analyses of special education, compared to regular education indicated three major findings: the quality of instructional programs is generally good: the students are generally making excellent progress in basic skills and social maturity; and costs on an average daily membership basis for the five major categories range from about two or three and one-half times higher than regular education. (CL)

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IS SPECIAL EDUCATION WORTH THE COST?

Is special education really helping handicapped children? Pennsylvania's Department of Education is making an intensive effort to answer this question. During the 1975-76 year evidence has been gathered which indicates the answer is: "Yes!"

The Pennsylvania "Special Education Quality Cost-Effectiveness Study" has been evaluating:

1. The quality of special education programs
2. Student progress
3. Cost of programs

This has involved a statewide, stratified random sample (using a table of random numbers) of some 388 classes and some 3900 pupils (fall 1975) in the following five major areas with average IQ's and chronological ages as indicated:

Categories	Average IQ Elementary	Average IQ Secondary	Average CA Elementary	Average CA Secondary
Trainable Mentally Retarded	43.51	40.29	12.22	17.61
Educable Mentally Retarded	68.73	69.29	11.58	16.50
Physically Handicapped	79.32	75.25	11.53	16.80
Brain Injured	92.21	90.97	11.07	14.66
Socially and Emotionally Disturbed	94.79	90.39	11.31	15.97

By the spring of 1977 it was possible to test 2,308 pupils and 274 classes in the original 1975 sample.

Quality of Special Education Programs

A major thrust was to develop a rating scale known as "Indicators of Quality." These indicators reflect criteria judged important by a statewide sample of some 300 persons which included special education teachers, supervisors, college faculty, parents and members of special interest groups, such as PARC (Pennsylvania Association for Retarded Children). Each statement was rated on a scale from one to five with descriptive phrases at the one (low), three (adequate) and five (highest) points. Generally the ratings of instructional programs for the 388 classes in the research sample were good.

INDICATORS OF QUALITY RESULTS
(Average Ratings on 5-point Scale)

Scale	1976 Ratings	1977 Ratings
Instructional Process	3.68	3.93
Instructional Setting	3.58	3.78
Administrative Support	3.89	4.12
Integration (Mainstreaming)	2.94	3.28
Total	3.60	3.84

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Student Progress

This was measured in the fall of 1975, spring of 1976 and spring of 1977. The primary tests were the Vineland Social Maturity Test and the Wide Range Achievement Test. Both of these were originally developed for use with normal children. The Vineland measures social age which may be compared with chronological age. The Wide Range Achievement Test measures reading, spelling and arithmetic and it provides grade equivalent scores. This achievement test was considered too difficult for the trainable mentally retarded and with this category the TMR Performance Profile was used.

The tables on pages 3 through 7 show gains in student progress.

Costs

Some are spending two to four times as much per pupil as others for special education. These differences appear to be caused by variations in such factors as class size and teacher salaries.

By dividing the costs per average daily membership of regular education into special education the following indices were obtained to indicate how much more on the average it costs for special education compared to regular education.

SPECIAL EDUCATION COSTS INDICES

Exceptionality	Elementary Indices	Secondary Indices	Total Indices
EMR	2.38	1.66	1.83
TMR	3.43	2.00	2.50
SED	4.45	2.87	3.41
PH	3.64	3.25	3.08
BI	3.53	1.82	2.67

Conclusions

The results indicate that Pennsylvania is fulfilling its obligations to special education students since:

1. The quality of the instructional programs is generally good.

2. The students generally are making excellent progress in basic skills and social maturity.

3. Costs on an average daily membership basis for five major categories of special education range from about two to three and one-half times higher than for regular education. This does not appear excessive in view of the nature of special education which requires a lot more individual attention and a much lower pupil-teacher ratio than is the case for regular education.

TABLE 1

EMR ELEMENTARY ACHIEVEMENT

Variable	Fall 1975 Mean	Fall 1975 S.D.[a]	Fall 1975 N[b]	Spring 1976 Mean	Spring 1976 S.D.	Spring 1976 N	Spring 1977 Mean	Spring 1977 S.D.	Spring 1977 N
Social Age	8.5	0.53	566	9.6	0.50	569	10.4	0.50	554
Reading	1.93	0.99	560	2.31	1.12	566	2.63	1.26	566
Spelling	1.92	0.99	558	2.26	1.11	566	2.60	1.08	566
Arithmetic	2.07	1.04	558	2.50	1.10	567	2.84	1.12	566

Variable	1975-76 Gain	1975-76 N	1976-77 Gain	1976-77 N	1975-77 Gain	1975-77 N
Social Age	1.1[c]	512	0.8	510	1.9	530
Reading	0.41[d]	516	0.36	507	0.74	525
Spelling	0.39	484	0.39	495	0.73	518
Arithmetic	0.48	498	0.38	497	0.82	524

TABLE 2

EMR SECONDARY ACHIEVEMENT

Variable	Fall 1975 Mean	Fall 1975 S.D.	Fall 1975 N	Spring 1976 Mean	Spring 1976 S.D.	Spring 1976 N	Spring 1977 Mean	Spring 1977 S.D.	Spring 1977 N
Social Age	13.6	0.45	582	15.8	0.51	589	17.3	0.50	590
Reading	3.75	1.70	582	4.03	1.84	571	4.30	1.92	579
Spelling	3.70	1.31	573	3.92	1.37	569	4.24	1.51	576
Arithmetic	3.82	1.26	582	4.22	1.29	581	4.45	1.29	579

Variable	1975-65 Gain	1975-65 N	1976-77 Gain	1976-77 N	1975-77 Gain	1975-77 N
Social Age	2.2	533	1.5	553	3.7	560
Reading	0.31	480	0.33	476	0.60	507
Spelling	0.26	417	0.45	408	0.62	456
Arithmetic	0.47	465	0.30	457	0.74	476

[a] Equals standard deviation
[b] Equals number of pupils
[c] 1.1 is a one year, one month average gain in social age in the 75-76 school year.
[d] 0.41 is a grade equivalent score average gain in the 75-76 school year.
Note: All gains were statistically significant.

TABLE 3

SED ELEMENTARY ACHIEVEMENT

Variable	Fall 1975 Mean	S.D.	N	Spring 1976 Mean	S.D.	N	Spring 1977 Mean	S.D.	N
Social Age	9.2	0.47	121	10.0	0.44	120	11.5	0.53	112
Reading	3.23	1.85	121	3.85	1.97	120	4.73	2.28	106
Spelling	2.85	1.76	121	3.53	1.92	119	4.00	1.95	106
Arithmetic	3.01	1.21	121	3.73	1.24	118	3.98	1.30	106

Variable	1975-76 Gain	N	1976-77 Gain	N	1975-77 Gain	N
Social Age	0.8	112	1.5	107	2.3	110
Reading	0.64	116	0.87	102	1.53	104
Spelling	0.73	111	0.47	98	1.16	102
Arithmetic	0.77	111	0.21	94	0.97	102

TABLE 4

SED SECONDARY ACHIEVEMENT

Variable	Fall 1975 Mean	S.D.	N	Spring 1976 Mean	S.D.	N	Spring 1977 Mean	S.D.	N
Social Age	14.1	0.35	78	15.8	0.38	78	16.8	0.31	72
Reading	6.14	3.15	78	7.10	3.72	77	7.13	3.55	77
Spelling	5.17	2.63	78	5.52	2.67	77	5.92	2.76	77
Arithmetic	5.00	1.66	78	5.78	2.21	77	5.98	2.36	77

Variable	1975-76 Gain	N	1976-77 Gain	N	1975-77 Gain	N
Social Age	1.7	67	1.0	70	2.7	69
Reading	1.09	67	0.06	69	1.10	70
Spelling	0.41	63	0.47	69	0.83	69
Arithmetic	0.86	72	0.24	60	1.16	68

Note: All gains were statistically significant except in reading and arithmetic between the spring of 1976 and the spring of 1977 for SED secondary. Except for social age, grade equivalent scores are reported.

TABLE 5

PH ELEMENTARY ACHIEVEMENT

Variable	Fall 1975 Mean	S.D.	N	Spring 1976 Mean	S.D.	N	Spring 1977 Mean	S.D.	N
Social Age	6.8	0.98	147	7.5	0.94	145	8.0	1.00	139
Reading	2.50	1.97	143	2.90	2.13	136	3.56	2.50	141
Spelling	2.25	1.75	132	2.68	1.86	135	3.85	3.16	140
Arithmetic	2.30	1.54	137	2.67	1.43	138	3.22	1.80	142

Variable	1975-76 Gain	N	1976-77 Gain	N	1975-77 Gain	N
Social Age	0.7	135	0.5	132	1.2	134
Reading	0.59	114	0.59	123	1.15	130
Spelling	0.59	116	1.18	121	1.65	126
Arithmetic	0.57	119	0.50	117	1.02	126

TABLE 6

PH SECONDARY ACHIEVEMENT

Variable	Fall 1975 Mean	S.D.	N	Spring 1976 Mean	S.D.	N	Spring 1977 Mean	S.D.	N
Social Age	8.4	1.04	83	9.5	1.05	82	9.9	1.06	82
Reading	5.02	2.71	74	5.33	2.72	73	5.99	3.23	76
Spelling	4.45	2.13	75	4.88	2.34	74	5.32	2.46	76
Arithmetic	4.12	2.02	74	4.56	2.04	74	5.10	2.43	76

Variable	1975-76 Gain	N	1976-77 Gain	N	1975-77 Gain	N
Social Age	1.1	79	0.4	72	1.5	78
Reading	0.36	67	0.60	66	0.93	71
Spelling	0.54	60	0.48	62	0.94	67
Arithmetic	0.60	61	0.61	56	1.12	64

Note: All gains were statistically significant. Except for social age, grade equivalent scores are reported.

TABLE 7

BI ELEMENTARY ACHIEVEMENT

Variable	Fall 1975 Mean	Fall 1975 S.D.	Fall 1975 N	Spring 1976 Mean	Spring 1976 S.D.	Spring 1976 N	Spring 1977 Mean	Spring 1977 S.D.	Spring 1977 N
Social Age	9.7	0.47	137	10.9	0.48	127	11.8	0.38	135
Reading	2.78	1.31	137	3.53	1.55	134	3.95	1.50	137
Spelling	2.52	1.15	137	3.17	1.28	134	3.64	1.29	137
Arithmetic	2.98	1.01	137	3.62	1.12	133	3.97	1.14	137

Variable	1975-76 Gain	1975-76 N	1976-77 Gain	1976-77 N	1975-77 Gain	1975-77 N
Social Age	1.2	121	0.9	119	2.1	132
Reading	0.76	128	0.48	125	1.19	135
Spelling	0.69	122	0.52	124	1.13	136
Arithmetic	0.68	123	0.44	113	1.07	127

TABLE 8

BI SECONDARY ACHIEVEMENT

Variable	Fall 1975 Mean	Fall 1975 S.D.	Fall 1975 N	Spring 1976 Mean	Spring 1976 S.D.	Spring 1976 N	Spring 1977 Mean	Spring 1977 S.D.	Spring 1977 N
Social Age	14.4	0.26	107	15.5	0.25	106	16.1	0.30	95
Reading	4.15	1.70	107	4.90	1.84	101	5.10	1.95	89
Spelling	3.56	1.12	107	4.01	1.10	101	4.13	1.32	89
Arithmetic	4.29	1.15	107	4.99	1.46	101	5.41	1.62	89

Variable	1975-76 Gain	1975-76 N	1976-77 Gain	1976-77 N	1975-77 Gain	1975-77 N
Social Age	1.1	91	0.6	89	1.7	87
Reading	0.73	95	0.43	78	1.01	87
Spelling	0.48	84	0.19	73	0.72	78
Arithmetic	0.75	91	0.42	81	1.21	84

Note: All gains were statistically significant except in spelling between the spring of 1976 and the spring of 1977 for BI secondary. Except for social age, grade equivalent scores are reported.

TABLE 9

TMR ELEMENTARY ACHIEVEMENT

Variable	Fall 1975 Mean	Fall 1975 S.D.	Fall 1975 N	Spring 1976 Mean	Spring 1976 S.D.	Spring 1976 N	Spring 1977 Mean	Spring 1977 S.D.	Spring 1977 N
Social Age	4.8	0.83	277	5.8	0.74	281	6.4	0.75	272
TMR Profile	391.9	172.81	277	466.4	166.57	281	492.7	166.62	278

Variable	1975-76 Gain	1975-76 N	1976-77 Gain	1976-77 N	1975-77 Gain	1975-77 N
Social Age	1.0	261	0.6	252	1.6	260
TMR Profile	74.96	274	24.11	276	98.50[a]	274

TABLE 10

TMR SECONDARY ACHIEVEMENT

Variable	Fall 1975 Mean	Fall 1975 S.D.	Fall 1975 N	Spring 1976 Mean	Spring 1976 S.D.	Spring 1976 N	Spring 1977 Mean	Spring 1977 S.D.	Spring 1977 N
Social Age	7.5	0.65	148	8.4	0.68	153	8.3	0.77	184
TMR Profile	495.7	159.83	179	565.9	155.38	188	579.5	163.78	187

Variable	1975-76 Gain	1975-76 N	1976-77 Gain	1976-77 N	1975-77 Gain	1975-77 N
Social Age	0.9	138	-0.1	137	0.8	139
TMR Profile	72.09	172	12.55	186	88.29[b]	177

[a] 98.50 represents an average raw score gain of about 25 per cent on the TMR Performance Profile between the fall of 1975 and the spring of 1977.

[b] 88.29 represents an average raw score gain of about 18 per cent between the fall of 1975 and the spring of 1977.